

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 6, with the following rewritten paragraph:

-- The present invention is related to gold or silver particles characterized by having paramagnetism, and to ~~epilation~~ hair growth agents, cosmetics, or toothpaste compositions containing the same. --

Please replace the paragraph beginning at page 2, line 6, with the following rewritten paragraph:

-- The fields of application of nano particles vary according to whether nano particles are metals or ceramics. It has been published that nano powder has been applicable not only to highly functional and highly efficient materials designed in electronic, communication, and molecular units but also to drug ~~transmission~~ delivery systems and selective new medicinal fields that have been proper for human bodies. In the bio-science field, it has been shown that it has been possible to develop synthetic skin in the hybrid system, analysis and manipulation of genes, and substitute materials for blood, and to make organs and skin having no side effects to human bodies. It has been also possible to reduce contaminated materials by removing unseen dust, minute particles and to use re-utilization materials. Besides, nano powder is applicable extensively to the fields of substitute energy and ~~space-aviation~~ aerospace. --

Please replace the paragraph beginning at page 3, line 23, with the following rewritten paragraph:

-- Magnetic properties of materials are divided into strongly magnetic, weakly magnetic, and diamagnetic. Weakly magnetic materials are further divided into anti-ferromagnetic materials and paramagnetic materials. In case of paramagnetic materials, magnetic effects of electrons including spinning and orbital movements are offset each other exactly in most of atoms or ions making atoms or ions show no magnetic properties. This is shown in ~~inactive~~ inert gases such as neon, etc., or copper ions forming copper, etc. However,

in some atoms or ions, magnetic effects of electrons are not offset completely, and all atoms have magnetic dipole moment. --

Please replace the paragraph beginning at page 4, line 22, with the following rewritten paragraph:

-- A material called a diamagnetic material has neither magnetic dipole of its own nor paramagnetism, but magnetic moment may be induced by the external magnetic field. Magnetic force is operated if samples of such material are placed near an uneven and strong magnetic field. However, contrary to an electric material, samples are pushed away, not drawn to the sides of electrodes of a magnet. Such difference between electricity and magnetism is because electric dipole induced is in the same direction as that of the external electric field, whereas magnetic dipole induced is in the opposite direction to that of the external magnetic field. Diamagnetism is a property in which Faraday's law of induction is applied to electrons in atoms, where the movement of electrons is a very small current ~~chain~~ loop from a classical point of view. The fact that the direction of the induced magnetic moment is opposite to that of the magnetic field is the result of Lenz's law in view of the scale of atoms. --

Please replace the paragraph beginning at page 5, line 13, with the following rewritten paragraph:

-- In the meantime, gold and silver are typical diamagnetic materials. That is, gold or silver powder shows magnetic properties in the opposite direction to that of the external magnetic field, and such diamagnetic characteristics are not known to be changed even if the size of gold or silver powder becomes equivalent to the size of nano particles. The dispersibility of gold or silver powder is also inferior due to a high cohesive force among particles making the fields of its application limited. Therefore, in the fields of application coming from the original characteristics of gold and silver, gold nano powder is simply used for nano gold soaps, sports lotions, cosmetics, beverages, semi-conductor luminous elements, drug ~~transmitters~~ carriers, etc.; and silver nano powder is applicable to bio products such as cosmetics, fibers, pigments, plastics, etc., and anti-bacterial, germicidal, and anti-contaminant fouling materials. --

Please replace the paragraph beginning at page 6, line 6, with the following rewritten paragraph:

-- It was confirmed that the effects for ~~epilation~~ hair growth were superior owing to the activation of germanium dioxide if paramagnetic silver was used along with germanium dioxide; if silver nano particles were added to toothpastes rather than adding the conventional diamagnetic silver particles, strong germicidal effects were shown, unique effects of increasing the activities of various active components contained in toothpaste compositions were shown, remarkable whitening effects were shown, the surface of teeth was shiny as there were no surface oxidation layers of the above paramagnetic silver and light scattering effects were superior, and there were operational effects of beautifying the appearance of teeth; and there were effects of increasing the activities of various active components contained in cosmetic compositions, promoting moisturizing effects of the skin, improving troubles of the skin, preventing the skin from being sticky, making the skin soft, and purifying the skin. The present invention was completed based on these findings. --

Please replace the paragraph beginning at page 6, line 23, with the following rewritten paragraph:

-- It is, therefore, an object of the present invention to provide with paramagnetic gold or silver powder having mass ~~magnetism~~ magnetization in the same direction as that of the external magnetic field, i.e., in the positive direction at all temperature ranges ~~with respect to that~~ while the conventional gold or silver powder is diamagnetic, where the paramagnetic gold or silver powder according to the present invention shows an extremely small coercive force, has no surface oxidation layers, is ~~unstable~~ stable at a room temperature, and has no cohesion property, but a high dispersibility. --

Please replace the paragraph beginning at page 7, line 8, with the following rewritten paragraph:

-- It is still another object of the present invention to provide with ~~epilation~~ hair growth compositions containing paramagnetic silver and toothpaste compositions containing paramagnetic silver nano powder. --

Please replace the paragraph beginning at page 8, line 3, with the following rewritten paragraph:

-- Further, the paramagnetic gold or silver powder according to the present invention is characterized by that inclination dM/dH of the mass ~~magnetism~~ magnetization curve is positive at an absolute temperature of 20 K with the external magnetic field, H, of greater than 1,000 Oe. Still further, the paramagnetic gold or silver powder according to the present invention shows an extremely small coercive force, has no surface oxidation layers, is stable at a room temperature, has no cohesive property, and is highly dispersible. --

Please replace the paragraph beginning at page 12, line 6, with the following rewritten paragraph:

-- In the equipment for the manufacture of the high-purity paramagnetic gold or silver powder according to the present invention, RF power system (1) is connected to RF matching circuits of hybrid control-type matching system (2) through about 5 m RF transmission line, matching circuits are connected mechanically to the helical antenna of inductive coupled plasma torch (3) by means of 0.5 mm-thick, 20 mm-wide, and 400 mm-long to the maximum copper ribbon-type plates, and the above antenna is put to earth electrically by first class. The helical antenna should be cooled with low-conduction cooling water of the low-conduction-water cooling system (9). Viton O-ring seals are equipped with in order to maintain a vacuum of 10^{-5} torr by integrating all of the inductive coupled plasma torch (3), plasma reaction tube system (4), raw material injection system (6), and powder collection system (8) with vacuum exhaustion system (7). Particularly, RF is connected between (3) and (4), and between (3) and (6), by using Teflon disks that are longer than 10 mm to prevent a short to the earth through the walls of (3), (4), (6), and (8) so that plasma is not shown directly, and also, (3), (4), (6), and (8) are installed with cooling ~~taken into consideration~~ in order to prevent gases contaminated by heat transmission from coming out. All of (3), (4), (6), and (8) should be installed vertically since a free-falling injection method without using transfer gases is used in order not to have the transfer of raw material powder affect the quality of plasma to the maximum. --

Please replace the paragraph beginning at page 13, line 4, with the following rewritten paragraph:

-- Reaction tube system of the plasma reaction tube system (4) assumes a role of confining metal plasma, and stainless steel or glass is used for the system according to what is the material. Also, manual RF inductive elements (antennas) are installed at the inner and outer parts of the plasma reaction tube system (4) in order to control the temperature of metal plasma, where the position of manual elements (antennas) or the gaps among elements are controlled according to the granularity and appearance of the synthesized powder. The final liquid nitrogen heat exchange system (10) is installed inside of the vacuum of the bottom part of this reaction tube in order to control the granularity of the synthesized powder. A cooling system is equipped with enabling control of the temperature of cooling by using water, low-temperature nitrogen, or liquid nitrogen according to the material and the granularity of the material. It is connected through vacuum bonding with taking into consideration shrinkage during cooling ~~taken into consideration~~ in order to use liquid nitrogen. --

Please replace the paragraph beginning at page 15, line 7, with the following rewritten paragraph:

-- Also, paramagnetic silver according to the present invention has a fast absorption power to the skin, a good feeling when it is touched to the skin as it is not sticky, effects for ~~epilation~~ hair growth and prevention of hair loss when it is used along with germanium dioxide, superior anti-bacterial, germicidal, and anti-contamination effects, superior effects for making teeth look beautiful, and characteristics of beautifying the appearance of teeth by having their surface ~~sparkling~~ glossy owing to scattering of light as there are no oxidation layers on the surface of the powder. And paramagnetic gold or silver according to the present invention is characterized by increasing the activity of active components of cosmetics, having a superior skin absorption property, having superior anti-bacterial effects, being proper for various sensitive skins, and improving skin troubles. --

Please replace the paragraph beginning at page 22, line 22, with the following rewritten paragraph:

-- In other words, at an absolute temperature of 20K and in a high magnetic field region of higher than a saturated magnetic field, the inclination of the mass magnetization curve shows a negative value smaller than "0" ($dM/dH < 0$) in case of a silver raw material. On the other hand, in case of the Ag white type, the inclination of the mass magnetization shows almost no dependency on the magnetic field, but has a positive value greater than "0" ($dM/dH > 0$) of Ag gray type and Ag black type ~~compared to the value of mass magnetization.~~ --

Please replace the paragraph beginning at page 26, line 11, with the following rewritten paragraph:

-- Manufacture of ~~Epilation~~ Hair Growth Agent Compositions --

Please replace the paragraph beginning at page 26, line 13, with the following rewritten paragraph:

-- The magnetic silver nano powder manufactured according to the method described in Manufacturing Example 3 is used for the paramagnetic silver nano powder to be added. Germanium dioxide included in ~~epilation~~ hair growth agent compositions according to the present invention is a natural organic lignite extract. High-purity lignite powder obtained through high-temperature combustion in a 1,600 to 2,000 °C combustion furnace and washing with water of lignite is dissolved to have a concentration of 3 to 200 ppm. --

Please replace the paragraph beginning at page 26, line 20, with the following rewritten paragraph:

-- ~~Epilation~~ Hair growth agent compositions are manufactured by dissolving each component at 21°C by using the components and mixing ratios shown in the following Table 4. The ~~epilation~~ hair growth agent compositions thus manufactured are colorless and transparent, and has a pH of 7.76. --

Please replace the paragraph beginning at page 27, line 11, with the following rewritten paragraph:

-- ~~Epilation~~ Hair Growth Effect Experiments --

Please replace the paragraph beginning at page 27, line 13, with the following rewritten paragraph:

-- Effects for ~~epilation~~ hair growth are measured for 15 patients of various hair-losing diseases in their thirties to sixties. Effects of ~~epilation~~ hair growth are evaluated by applying the ~~epilation~~ hair growth agent compositions manufactured in Preferred Embodiments 3 through 5 and the compositions in Comparative Example 1 not containing silver nano particles and germanium dioxide to the scalp of each patient. Administration of these compositions to the scalp is performed three times a day for 4 months, and the state of hair growth is evaluated after 4 months. The criteria for evaluation are as follows: 1. Highly effective--~~newly grown neonatal~~ hair (~~strong terminal~~ hair); 2. Intermediately effective--~~newly grown neonatal~~ hair (~~downy vellus~~ hair); 3. A little effective--reduced number of hair loss; and 4. Not effective. The results of tests are shown in Table 5. --

Please replace the paragraph beginning at page 28, line 9, with the following rewritten paragraph:

-- Table 5 shows that ~~epilation~~ hair growth agent compositions in Preferred Embodiments 3 through 5 containing paramagnetic silver nano particles and germanium dioxide have superior ~~epilation~~ hair growth effects, but it is confirmed that the compositions in Comparative Example 1 not containing silver nano particles and germanium dioxide show none of significant ~~epilation~~ hair growth effects. --

Please replace the paragraph beginning at page 28, line 14, with the following rewritten paragraph:

-- Particularly, the compositions in Preferred Embodiment 5 containing a large amount of paramagnetic silver nano particles as well as saccharides show the best ~~epilation~~ hair growth effects, and ~~newly born downy neonatal vellus~~ newly born downy neonatal vellus hairs or ~~strong terminal~~ strong terminal hairs begin to grow from the first or second month, and the effect of regeneration of hairs are shown in 13 patients among 15 patients from the fourth month. It is, therefore, confirmed that the ~~epilation~~ hair growth agents according to the present invention activate hair follicles shrunk by the immunity reinforcement actions of paramagnetic silver nano particles and germanium dioxide, and thus, regenerate hair follicles. It is expected that they bring about superior effects for the acceleration of ~~epilation~~ hair growth and prevention of hair loss for the patients of hair loss eventually. --

Please replace the paragraph beginning at page 31, line 14, with the following rewritten paragraph:

-- Anti-bacterial power is evaluated in the agar culture medium dilution method by using BHIA containing the components in Preferred Embodiments 6 and 7 and Comparative Example 2 and 3 in each concentration. Tests are performed ~~with~~ at a total of 10 concentrations ~~diluted in 10 steps in total~~ by serially diluting by 2 folds testing toothpaste compositions ~~that have been diluted by 50 times to 2 times folds~~. --

Please replace the Table at page 32 with the following rewritten Table:

Tested bacteria	MIC	Preferred Embodiment 6 (Dilution fold)	Preferred Embodiment 6 (Dilution fold)	Comparative Example 2 (Dilution fold)	Comparative Example 3 (Dilution fold)
Actionbacillus actinomycetemcomitans	7	200	200	100	100
Fusobacterium nucleatum	2.5	800	400	100	200
Streptococcus mutans	0.5	800	800	200	400
Actinomyces viscosus	2.5	800	800	200	400

Please replace the Table at page 36 with the following rewritten Table:

Component	Content (wt %)
Purified water	Rest
Trehalose	3.0
Concentrated glycerin	3.0
Ethanol	3.0
Butylene glycol	2.0
Polyoxyethylene hydrogenated castor oil	0.3
Phenyltrimethicone	0.15
Carboxy vinyl polymer	0.08
Triethanol amine	0.05
Ethylenediamine sodium tetraacetate	0.02
Fragrance	Proper amount
Ag nano particles	30 ppm

Please replace the Table at page 39 with the following rewritten Table:

Component	Content (wt %)
Purified water	Rest
Poly(vinyl alcohol)	15.0
Ethanol	5.0
Concentrated glycerin	2.0
Propylene glycol	2.0
Octyldodeceth-16	0.4
Sodium carboxy methyl cellulose	0.3
Polyoxyethylene hydrogenated castor oil	0.2
Ethylenediamine sodium tetraacetate	0.02
Fragrance	Proper amount
Ag nano particles	20 ppm
Au nano particles	10 ppm